AMENDMENTS TO THE CLAIMS:

The following Listing of Claims will replace all prior listings of claims in the application. Kindly amend claim 73, and cancel claims 68, 71, 74, 77, 80 and 86 as follows:

Listing of Claims:

1-65. (canceled)

66. (previously presented) A CVD system that acquires and analyzes spectral images of a wafer having one or more film properties prior to, during, and/or following a CVD process, the system comprising:

a plurality of stations involved in performing one or more aspects of the CVD process;

a wafer transfer mechanism disposed within the system to transfer the wafer between stations;

means for illuminating the wafer while the wafer is transferred between stations;

a spectral imager disposed to detect light from said illuminating means that is reflected from the wafer and configured to produce a plurality of one-dimensional spectral frames while said spectral imager and the wafer undergo relative motion provided by said wafer transfer mechanism; and

a processing means for analyzing said plurality of one-dimensional spectral frames, where said processing means aggregates sequential one-dimensional spectral frames to form two-dimensional spectral images and analyzes them.

67. (previously presented) The system of claim 66 where the one or more film properties is a thickness value of one of one of the one or more film layers at one or more sites on the wafer.

68. (canceled)

69. (previously presented) A method of obtaining and analyzing a spectral image of a wafer having one or more film layers prior to, during, and/or following a CVD process, the method comprising the steps of:

illuminating the wafer with light;

positioning the wafer so that a desired portion of the wafer is illuminated;

detecting light reflected from said desired portion of the wafer using a spectral imager configured to produce a sequence of one-dimensional spectral frames while said spectral imager and the wafer undergo relative motion provided by a transfer mechanism used to move wafers between one or more storage and one or more process stations;

aggregating said sequence of one-dimensional spectral frames to form a two-dimensional spectral image, and analyzing said two-dimensional image to determine a film layer property.

70. (previously presented) The method of claim 69 where the film layer property is a thickness value of one of the one or more film layers at one or more sites on the wafer.

71. (canceled)

72. (previously presented) A CMP system that acquires and analyzes spectral images of a wafer having one or more film properties prior to, during, and/or following a CMP process, the system comprising:

a plurality of stations involved in performing one or more aspects of the CMP process;

a wafer transfer mechanism disposed within the system to transfer the wafer between said stations;

means for illuminating the wafer while the wafer is transferred between stations;

a spectral imager disposed to detect light from said illuminating means that is reflected from the wafer and configured to produce a plurality of one-dimensional spectral frames while said spectral imager and the wafer undergo relative motion provided by said wafer transfer mechanism; and

means for processing said plurality of one-dimensional spectral frames, where said processing means aggregates sequential one-dimensional spectral frames to form a two-dimensional spectral image, and analyzes said two-dimensional spectral image to determine one or more film layer properties.

73. (currently amended) The system of claim ~~73~~ 72 where the one or more film layer properties is a thickness value of one of the one or more film layers at one or more sites on the wafer.

74. (canceled) The system of claim 73 where said processing means determines a process endpoint.

75. (previously presented) A method of obtaining and analyzing a spectral image of a wafer having one or more film layers prior to, during, and/or following a CMP process, the method comprising the steps of:

illuminating the wafer with light;

positioning the wafer so that a desired portion of the wafer is illuminated;

detecting light reflected from said desired portion of the wafer using a spectral imager configured to produce a sequence of spatially contiguous one-dimensional spectral frames while said spectral imager and the wafer undergo relative motion provided by a transfer mechanism used to move wafers between one or more storage and one or more process stations;

aggregating said frames to form a two-dimensional spectral image; and

analyzing said two-dimensional spectral image.

76. (previously presented) The method of claim 75 where analyzing said two-dimensional spectral image determines a film layer thickness value of one of the one or more films at one or more sites on the wafer.

77. (canceled)

78. (previously presented) A semiconductor wafer processing system that acquires and analyzes spectral images of a wafer prior to, during, and/or following a process, the system comprising:

a plurality of stations involved in performing one or more aspects of the system process;

a wafer transfer mechanism disposed within the system to transfer the wafer between stations;

means for illuminating the wafer while the wafer is transferred between said stations;

a spectral imager disposed to detect light from said illuminating means that is reflected from the wafer, and where said spectral imager is configured to produce a plurality of one-dimensional spectral frames while said spectral imager and the wafer undergo relative motion provided by said wafer transfer mechanism; and

a processing means for analyzing said plurality of one-dimensional spectral frames, where said processing means aggregates sequential one-dimensional spectral frames to form two-dimensional spectral images.

79. (previously presented) The system of claim 78 where the one or more film layer properties is a thickness value of one of the one or more film layers at one or more sites on the wafer.

80. (canceled)

81. (previously presented) The system of claim 78 where the process is one of: a CVD process, a CMP process, or a stand-alone metrology process.

82. (previously presented) The system of claim 78 where stations include one of: a load station, an unload station, or a process station.

83. (previously presented) The system of claim 78 where said illuminating means is either pulsed or continuous while said spectral imager detects light.

84. (previously presented) A semiconductor wafer processing system that provides and analyzes spectral images of a wafer having one or more film layers prior to, during, and/or following a process, the system comprising:

a wafer transfer mechanism disposed within the system to transfer the wafer between a load station and a wafer chuck;

means for illuminating the wafer while the wafer is transferred between said load station and said wafer chuck;

a spectral imager disposed to detect light reflected from the wafer and configured to produce a one-dimensional spectral frame while said spectral imager and the wafer undergo relative motion; and

a processor that analyzes said one-dimensional frame.

85. (previously presented) The system of claim 84 where the one or more film layer properties is a thickness value of one of the one or more film layers at one or more sites on the wafer.

86. (canceled) The system of claim 84 where said processor determines a process endpoint.

87. (previously presented) A semiconductor wafer imaging system that acquires and analyzes spectral images of a wafer having one or more film layers prior to and/or following a process, the system comprising:

a first processing system that performs a first manufacturing step on the wafer;

a second processing system that performs a second manufacturing step on the wafer, where said second manufacturing step follows said first manufacturing step;

a wafer transfer mechanism disposed to transfer the wafer between said first processing system and said second processing system;

means for illuminating the wafer while the wafer is transferred between said first processing system and said second processing system;

a spectral imager disposed to detect light from said illuminating means that is reflected from the wafer, and where said spectral imager is configured to produce one-dimensional spectral frames; and

means for aggregating said one-dimensional spectral frames to form a two-dimensional spectral image and analyzing said two-dimensional spectral image to determine a film layer property of the one or more film layers.

88. (previously presented) The system of claim 87 where the one or more film layer properties is a thickness value of one of the one or more film layers at one or more sites on the wafer.

89. (previously presented) A method of obtaining and analyzing a spectral image of a wafer having one or more film layers between two wafer manufacturing processes, the method comprising the steps of:

using a transfer mechanism to secure the wafer from a first processing system that performs a first manufacturing step on the wafer;

illuminating the wafer with light from a light source;

positioning the wafer using said transfer mechanism so that a desired portion of the wafer is illuminated by light from said light source;

detecting light reflected from said desired portion of the wafer using a spectral imager configured to produce a sequence of contiguous one-dimensional spectral frames while said transfer mechanism moves the wafer;

aggregating said sequence of contiguous one-dimensional spectral frames to form a two-dimensional spectral image;

analyzing said two-dimensional image to determine one or more film layer properties of the one or more film layers; and

transferring the wafer to a second processing system that performs a second manufacturing step on the wafer.

90. (previously presented) The method of claim 89 where the one or more film layer properties is a thickness value of one of the one or more film layers at one or more sites on the wafer.